

**REMARKS**

Claims 1 and 3-15 are pending herein. By this Amendment, claims 6-11 and 14 have been cancelled, claim 1 has been amended and new claim 16 has been added.

Claim 1 has been amended to delete polyamides and polyamide block copolymers from the recitation of thermoplastic polymers (M) therein.

New Claim 16 is an independent claim directed to thermoplastic compositions containing 75 to 85% by weight of a thermoplastic polymer which is a polyamide or a polyamide block copolymer and 25 to 15% by weight of (B), wherein (B) is either an ethylene-2-ethylhexyl (meth)acrylate copolymer (B1) further carrying a functional group selected from particular functional groups or a blend of an ethylene-2-ethylhexyl (meth)acrylate copolymer (B2) which does not carry any of the functional groups which can be carried by copolymer (B1) and an impact modifier which does carry one of the functional groups that can be carried by copolymer (B1). Support for the percentages recited in new claim 16 can be found in the instant specification at, for example, page 11, lines 28-30.

In the Office Action mailed November 20, 2002, claims 1, 3-5, 12, 13 and 15 were rejected under 35 U.S.C. § 103(a) as being unpatentable over U.S. Patent No. 4,554,320 to Reimann et al. ("Reimann").

In view of the amendments and remarks herein, Applicants respectfully request reconsideration and withdrawal of the rejection set forth in the Office Action.

**I. The Rejection**

Claims 1, 3-5, 12, 13 and 15 are rejected under 35 U.S.C. § 103(a) as being unpatentable over Reimann for reasons of record.

As noted above, claim 1 has been amended to delete polyamides and polyamide block copolymers from the recitation of thermoplastic polymers (M) therein. Thus, the thermoplastic polymers recited in claim 1 are now fluoropolymers, polycarbonate, styrene resins, PMMA, thermoplastic polyurethanes, copolymers containing polyester blocks and

polyether blocks, polycarbonate-polyester alloys, polyketones, PVC and ethylene-vinyl alcohol copolymers.

The only thermoplastic polymer disclosed in Reimann is nylon (i.e., polyamide). Reimann does not teach or suggest the use of any of the thermoplastic polymers recited in instant claim 1. Reimann provides no motivation to use therein any thermoplastic polymer other than nylon and does not teach or suggest that nylon is interchangeable with other thermoplastic polymer for the purposes of the invention therein. Therefore, for at least this reason, Applicants submit that claim 1 and claims 3-5, 12, 13 and 15 (which depend directly or indirectly upon claim 1) would not have been obvious over Reimann.

## **II. New Claim 16**

Applicants also respectfully submit that Reimann would not have rendered new claim 16 obvious.

New claim 16 is directed to the same thermoplastic composition as recited in claim 1 except that the claim 16 composition is limited to polyamides or polyamide copolymers as the thermoplastic polymer and ethylene-2-ethylhexyl (meth)acrylate as copolymer (B) and further that the claim 16 composition contains 75 to 85% by weight of the thermoplastic polymer and 25 to 15% by weight of the copolymer (B).

According to the Office Action:

Applicants' reliance on the experimental data in the specification, comparing an ethylene copolymer having two carbon atoms against an ethylene copolymer having eight carbon atoms, is noted. Said showing, however, does not compare the closest embodiment of the prior art, i.e., an ethylene copolymer having seven, or at the very least, four carbon atoms. Accordingly, such is not deemed probative of unusual or unexpected results.

Data supplied by the assignee to the undersigned Applicants' representative compares the impact strength of the composition set forth in Example 5 of the instant specification with two compositions (referred to herein as "New Examples 8 and 9"). The

Example 5 composition contained a terpolymer within the scope of Applicants' claimed invention, particularly new claim 16. The compositions of New Examples 8 and 9 were outside the scope of the instant claimed invention. The composition of New Example 8 contained a terpolymer composed of ethylene, n-butyl acrylate and maleic anhydride ("Terpol 6"). The composition of New Example 9 contained a terpolymer composed of ethylene, ethylacrylate and maleic anhydride (i.e., "Terpol 1" as described in the instant specification on page 15, lines 14-16). The impact strengths of the compositions of Examples 5, 8 and 9 were compared, and the impact strength of the Example 5 composition at 23°C was found to be significantly higher than the impact strength of the Example 8 and Example 9 compositions at 23°C.

In New Examples 8 and 9, the compositions were prepared in accordance with the procedure described in Example 5 set forth in the except for the particular terpolymer used. The polyamide used in Examples 8 and 9 was nylon-6 of 20 MFI (235°C/2.16 kg) supplied by BASF under the designation "Ultramid®". The compositions prepared in Examples 8 and 9 contained 80% by weight of the polyamide and 20% by weight of the terpolymer.

Notched Charpy impact tests (according to the ISO 179:82 standard) were carried out on the compositions of Examples 8 and 9 to measure impact strength properties at 23°C and -40°C. The tests were conducted after a conditioning period of 15 days at 23°C and 50% relative humidity. The results are shown in Table A below:

**TABLE A**  
**Examples 8 and 9: Impact Strength at 23°C and -40°C**

<u>Example No.</u>	<u>Terpolymer</u>	<u>Impact Strength at 23°C</u>	<u>Impact Strength at -40°C</u>
8	Terpol 6	23	20
9	Terpol 1	22	22

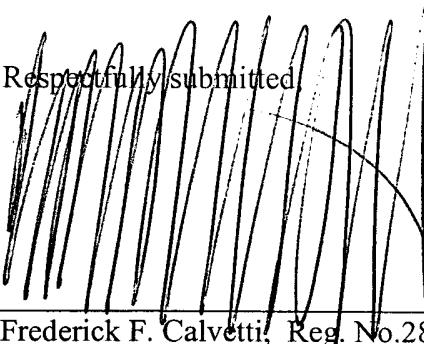
As shown in Table 1 at page 17 of the instant specification, the composition of Example 5 had a Notched Charpy impact strength (ISO 179:94) at +23°C of 43 and at -40°C of 17.

As can be seen from Table A above and Table 1 in the instant specification, the Example 5 composition, which contained the ethylene/2-ethylhexyl acrylate/maleic anhydride terpolymer, had a significantly higher impact strength at +23°C than did the Example 8 and 9 compositions, which contained the ethylene/n-butyl acrylate/maleic anhydride and the ethylene/ethyl acrylate/maleic anhydride terpolymers, respectively.

Applicants respectfully submit that the data discussed above shows that the use of 2-ethylhexyl acrylate in the terpolymer produces significantly better impact strength and provides unexpected results in the final composition. Thus, Applicants submit that for at least this reason, claim 16 is patentable over the prior art.

### **III. Conclusion**

In view of the foregoing amendments and remarks, Applicants respectfully request that the rejection be withdrawn and that claims 1, 3-5, 12, 13, 15 and 16 be allowed.

Respectfully submitted  
  
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## LISTING OF CLAIMS

Claim 1. (Currently Amended) Thermoplastic compositions comprising:

- 40 to 97 parts of a thermoplastic polymer (M) forming a matrix, the thermoplastic polymer (M) being selected from the group consisting of polyamides, ~~polyamide block copolymers~~, fluoro polymers, polycarbonate, styrene resins, PMMA, thermoplastic polyurethanes (TPU), copolymers containing polyester blocks and polyether blocks, polycarbonate-polyester alloys, polyketones, PVC and ethylene-vinyl alcohol copolymers (EVOH),

- 60 to 3 parts of (B) comprising:

D1  
either an ethylene-alkyl (meth)acrylate copolymer (B1), the alkyl having at least 8 carbon atoms, which copolymer (B1) further carries a functional group selected from the group consisting of carboxylic acids, carboxylic acid derivatives other than the ester functional group of the acrylate portion of the copolymer (B1), acid chlorides, isocyanates, oxazolines, epoxides, amines and hydroxides,  
or a blend of an ethylene-alkyl (meth)acrylate copolymer (B2), the alkyl having at least 8 carbon atoms, which copolymer (B2) does not carry a functional group selected from the group consisting of carboxylic acids, carboxylic acid derivatives other than the ester functional group of the acrylate portion of the copolymer (B2), acid chlorides, isocyanates, oxazolines, epoxides, amines and hydroxides, and of an impact modifier which carries a functional group selected from the group consisting of carboxylic acids and their derivatives, acid chlorides, isocyanates, oxazolines, epoxides, amines and hydroxides.

Claim 2. (Cancelled)

Claim 3. (Previously Amended) Compositions according to Claim 1, wherein the alkyl of the alkyl(meth)acrylate of (B1) and (B2) has from 8 to 20 carbon atoms.

Claim 4. (Previously Amended) Compositions according to Claim 1 wherein the impact modifier is an ethylene/alkyl (meth)acrylate/maleic anhydride copolymer.

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Claim 5. (Previously Amended) Compositions according to Claim 1, wherein the proportion of (B) is from 5 to 35 parts per 95 to 65 parts of (M).

Claim 6. (Cancelled)

Claim 7. (Cancelled)

Claim 8. (Cancelled)

Claim 9. (Cancelled)

Claim 10. (Cancelled)

Claim 11. (Cancelled)

Claim 12. (Previously Added) Compositions according to Claim 3, wherein acrylate is 2-ethylhexyl acrylate.

Claim 13. (Previously Added) Compositions according to Claim 5, wherein the proportion of (B) is from 15 to 25 parts per 85 to 75 parts of (M).

Claim 14. (Cancelled)

Claim 15. (Previously Added) Compositions according to Claim 3, wherein the alkyl (meth)acrylate of (B1) and (B2) is 2-ethylhexyl acrylate.

Claim 16. (New) Thermoplastic compositions comprising by weight:

- 75 to 85 % of a thermoplastic polymer (M) forming a matrix, the thermoplastic polymer (M) being a polyamide or a polyamide block copolymer, and

- 25 to 15 % of (B) comprising:

D1 either an ethylene-2-ethylhexyl (meth)acrylate copolymer (B1) further carrying a functional group selected from the group consisting of carboxylic acids, carboxylic acid derivatives other than the ester functional group of the acrylate portion of the copolymer (B1), acid chlorides, isocyanates, oxazolines, epoxides, amines and hydroxides,

or a blend of an ethylene-2-ethylhexyl (meth)acrylate copolymer (B2) which does not carry a functional group selected from the group consisting of carboxylic acids, carboxylic acid derivatives other than the ester functional group of the acrylate portion of the copolymer (B2), acid chlorides, isocyanates, oxazolines, epoxides, amines and hydroxides, and of an impact modifier which carries a functional group selected from the group consisting of carboxylic acids and their derivatives, acid chlorides, isocyanates, oxazolines, epoxides, amines and hydroxides.